

The following words, written by Dr. Fletcher in the lifetime of Mr. Taylor, and in the paper above referred to, convey much in few words, and were justly due to the deceased: "Mr. Taylor is an indefatigable collector and a generous correspondent, who considers no trouble too much to make observations or secure specimens when specially desired. In his parish work he is painstaking, gentle and self-denying—always ready to help. A clear and forcible preacher and an earnest liver, who shows in his works that religion is not an accessory of every-day life, but an integral part of it."

Mr. Taylor died of paralysis, on August the 22nd last, and was buried in the cemetery at Nanaimo. He leaves to mourn his loss a married daughter and two sons. The funeral service was read by a dear friend of the deceased, the Venerable Archdeacon Scriven.

It is to be hoped that measures will be taken to secure for the benefit of posterity the very valuable conchological and (remaining) entomological collections left by Mr. Taylor.

T. W. F.

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## ON THE DIPTERA OF BAJA CALIFORNIA, INCLUDING SOME SPECIES FROM ADJACENT REGIONS.—II.\*

BY C. H. T. TOWNSEND, LIMA, PERU.

This paper embodies a report on a lot of flies sent me for determination some years ago by the California Academy of Sciences. They were secured on a later expedition than those mentioned in the first paper.† Unless otherwise stated, they were collected jointly by Dr. Gustav Eisen and Mr. Frank H. Vaslit, who, together, visited and collected in San José del Cabo in September, and Tepic in October and November, 1894. Species already listed in the first section appear here with their original numbers.

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\*The present paper has been in manuscript for nearly ten years, but with many others was never reached by the Publication Committee of the California Academy of Sciences, owing to lack of funds. It was returned to me many years ago, has since that time been overlooked, and is now offered on account of the fact that the results it contains appear to have lost none of their interest during the lapse of time.

†Section I appeared in Proc. Cal. Acad. Sci., Ser. 2, Vol. IV, pp. 593-620. October, 1912

## BIBIONIDÆ.

2. *Dilophus stygius* Say.

Tepic.—Twelve ♂s and forty-three ♀s, Nov. One pair *in coitu*, which verifies my conclusion that the two sexes associated together in my former determination (see No. 2 of Section I) are the same species. The females vary considerably in size, some being as small as the larger males. The small linear blackish stigma in the whitish wings of the ♂ is often nearly or quite obsolete.

It is worthy of note that, among the specimens sent me of the females of this species, there was inadvertently included a specimen of a black sawfly, which would easily pass for a ♀ *Dilophus stygius* if not looked at a second time. This sawfly is of the same uniform deep shining black as the ♀ *stygius*, is of the same size, and has the same black wings of corresponding shade. I can hardly resist the conclusion that the sawfly mimics the ♀ *stygius*, though for what reason cannot at present be said. The sawfly is a remarkable form, in that it possesses long-branched antennæ. Each antenna is split nearly to base into two branches, the stalk or pedicel being short and bare, and the branches hairy. The abdomen of the sawfly is more shining than that of the ♀ *stygius*, but this does not show save on close inspection, while its general form closely approaches that of the ♀ *stygius* abdomen. Of course, the head of the sawfly is totally different from that of the ♀ *stygius*, but this is not conspicuous on first sight, the effect being lost in the uniform colour resemblance and otherwise close similarity.

*D. stygius* is an abundant Mexican species. The length of the body in the ♀ does not average over 6 mm. in the present specimens. I believe that the ♀ *Dilophus* identified by Bellardi as *orbatus* Say (Saggio I, p. 19) was not that species, but *stygius* Say. My reasons for this opinion are as follows :

*D. stygius* was described by Say from Mexico. *D. orbatus* was described by Say from Pennsylvania, and Osten Sacken has identified as *orbatus* two sexes of a species collected in Florida by himself. It is very common for a Middle Atlantic Coast species to extend into Florida, but rarely does a northern species extend so far southwest as Southern Mexico. Bellardi's specimens were from Orizaba. I have myself taken in numbers in the outskirts of Orizaba what I believe to be *stygius*. The males from Florida, which Osten Sacken identifies as *orbatus*, and which I consider to be that species in all probability, are described as having the wings

yellowish, whereas all the Mexican males that I have seen have the wings distinctly whitish with no yellowish tinge. Bellardi gives the length of his specimen (♀) as 8 mm., which is much longer than ♀ *orbatus* as given by Say ( $\frac{1}{5}$  inch = less than 5 mm.), and Wiedemann (2 lines = about 4 mm.). The median cross-vein of the wing is always present in both sexes; it is often situated in both sexes exactly at the furcation of the vein, at other times being just a little distance before the furcation.

62. *Plecia bellardii* Towns., n. nom.

Syn. *vittata* Bell. (nec. Wied.) preocc.

Tepic.—Eight ♂s and three ♀s, Nov. Aside from the genital characters the females may be known by the eyes not being contiguous but well separated, the front being fully as wide as the eyes. Bellardi says that the ♀s are larger than the ♂s, and have the wings longer and wider. In my specimens there is hardly any difference in size of body or wings, except that the abdomen of the ♀ may be slightly larger. Length of body about 7 mm., of wing about 9 mm.

I identify these specimens with Bellardi's (not Wiedemann's) *Plecia vittata*, which Schiner (Nov. Reise Dipt., p. 22), makes a synonym of *plagiata*. I believe that this synonymy is incorrect. If *vittata* Bell. is distinct, as I believe, it must be called by another name, as *vittata* is preoccupied by Wiedemann. I have therefore proposed the name *bellardii*.

There is no brownish tinge to the wings, which vary from a dense to a dilute black, with an iridescent greenish to violet reflection in oblique lights. Wiedemann describes the darker parts of the wings of *plagiata* as blackish brown, Schiner gives no reason whatever for placing *vittata* Bell. as a synonym of *plagiata*.

TABANIDÆ.

63. *Pangonia tepicana* Towns., n. nom.

Syn. *P. basilaris* Wd., Aus. Zweifl., II, 621 (preocc.).

Tepic.—One ♀, Oct. I believe this to be *P. basilaris* Wd., Aus. Zweifl., II, p. 621 (not *basilaris* Wd., Aus. Zweifl., I, pp. 554-5, and not *wiedemanni* Bell., Saggio Ditt. Mess., I, p. 48). Von Röder has pointed out (Dipt. gesam. Süd-Amerika von A. Stübel, p. 7) the differences in the wing coloration of *basilaris* (Wd., Aus. Zw., I, pp. 554-5) and *wiedemanni* Bellardi. In the latter the black of wings is confined to the extreme base, and extends only as far as the cross-veins at base of basal cells. In the former it extends to the cross-veins, closing the basal cells, and takes up the whole basal third of the wing. Röder's specimen of *basilaris* was from the Rio del Cinto (Ecuador), about 5,000 ft.

My specimen agrees perfectly with Wiedemann's description (Aus. Zw., II, 621). It differs markedly, as does also Wiedemann's description, from *P. wiedemanni*, as described by Bellardi. I therefore believe that Bellardi was in error in identifying his species with Wiedemann's. *P. tepicana* differs as follows from Bellardi's description of *wiedemanni*:

♀.—Length, 12½ mm.; proboscis, hardly 3½ mm. Front brownish-yellow pollinose, first two antennal joints light brownish yellow, third wholly reddish yellow, apex not fuscous. Apical annulus elongate, narrow and pointed, hardly half length of rest of third joint. Third joint is swollen at base, but flattened, and the annuli are strongly contiguous. Face brownish-yellow pollinose. Palpi not unusually elongate, last joint about as long as third antennal joint, flattened and curved, but pointed at tip. The palpi and the six lancet-like organs are clear reddish yellow. There are four faint lines apparent on thorax, distinguished from the fuscous-yellow pollinose surface by being more thickly pollinose. Abdomen brownish yellow, first segment black under scutellum, from which a black median vitta extends back to fifth segment (subobsolete for a short distance on third segment in my specimen). Third, and especially fourth and fifth segments tinged with brownish, due to age of specimen no doubt. First two segments with yellowish hair only; third with black hair on anterior two-thirds and yellow hair on posterior one-third; fourth and fifth (these segments are short) with black hair anteriorly, and yellow hair behind, giving the hind border of abdomen a good fringe of yellow hair. Femora blackish, rest of legs wholly orange-yellow, with front femora distally tinged with same colour. Wings tinged with fuscous-yellow, the extreme base blackish brown. All else as in Bellardi's description.

This species will be distinguished at once by the smaller size, shorter proboscis, black femora, and the median abdominal vitta and black hair of third to fifth abdominal segments.

15. *Tabanus punctifer* O. S.

Mesa Verde, L. Cal. One ♀, Oct., 1893 (Eisen).

ASILIDÆ.

21. *Proctacanthus arno* Towns.

San José del Cabo. Four ♀s and seven ♂s, Sept. One of the ♂s measures 33 mm.

22. *Ecritrosia amphinome* Walk.

Syn. *Proctacanthus zamon* Towns. (Section I, No. 22).

San José del Cabo. Twenty ♂s and eleven ♀s, Sept. Four of the

♀s and three of ♂s measure 29 to 31 mm. I observed this species at Hermosillo, Sonora, in Sept. 1894, on the sand of the dry bed of the Rio Sonora.

64. *Doryclus distendens* Wd., var. *varipennis* Walk.

San José del Cabo. One ♀, Sept.

Dr. Williston places Walker's species as synonymous with *distendens*, but it may be considered a good variety on the strength of the two brown cross-bands of the wings. This is the first exact record of the species from north of Guatemala.

The present specimen is a strongly aberrant one, with body almost wholly brownish red, front tibiæ and metatarsi not at all blackish; and the fourth posterior cell wide open, being as wide on margin of wing as the first posterior cell. The lateral thoracic vittæ are grayish pollinose, but the two middle vittæ are tawny grayish. The middle vittæ are not elongate cuneiform from a hind view (see O. S., Biol. C. A. Dipt., I, 182), but are distinctly equilateral, well separated and parallel. From a front view they do appear elongate cuneiform. Abdomen is almost wholly brownish red, with only flakes of blackish in places, especially on underside.

Since Jænnicke's figure represents *Doryclus distendens* with the fourth posterior cell completely closed, I infer that this is the normal venation of the genus. Whether the present form should be separated on account of this cell being wide open I cannot now decide. As it otherwise agrees so closely with *Doryclus* in the more important characters, I refer it here.

APIOCERIDÆ.

26. *Rhaphiomidas xanthos* Towns.

San José del Cabo. One ♂, apparently not maturely coloured, seems to be this species. Sept.

Length, nearly 25 mm. This is the only specimen of *Rhaphiomidas* in the lot, which seems strange since so many occurred in the previous sendings. The wings do not quite reach the tip of the abdomen. Segments 6, 7 and 8 of abdomen together about as long as 5, which is but a little shorter than 3. It seems that in the previous description a segment was missed, which is revealed in this less matured specimen.

SYRPHIDÆ.

65. *Chrysogaster bellula* Will.

Tepic.—One ♀, Nov.

Length, 4½ mm. Resembles *intida* in antennæ, which are much

longer than face, and with second and third joints nearly equal in length. The face is not more than three-fifths the length of antennæ. It agrees perfectly in the wings with Williston's description of *bellula*, and not at all with *intida*; therefore I place it here. The antennæ are brown, with first two joints tinged with yellowish. The disk of abdomen is pronouncedly opaque blackish, but with some cupreous and green. The face is quite rugose and the epistoma is hardly produced downwards. I am unable to restore the markings of the eyes, doubtless because the specimen was originally an alcoholic one, and therefore cannot say toward which species it inclines in the pattern of the eye-picture. (See Williston, Biol. C. A. Dipt., III, p. 7.)

66. *Volucella obesa* Fab.

Tepic.—Two specimens, ♂ ♀, Oct.

Length, 10 to 11 mm. Metallic green. The third antennal joint is only moderately short in the ♀, and hardly shorter in the ♂.

67. *Volucella dichroica* G.—Tos.

Tepic.—One ♀ I consider as this species. Oct.

The face is strongly conically projected below, ending in two teeth formed by a median longitudinal notch in the apex of the cone, and I should hardly call it obtuse. The scutellum is not reddish-coppery (*rosso-rame*), but of the same greenish-violaceous colour as the thorax and abdomen. The metatarsi and next two joints, especially in the hind legs, are pale brownish-yellowish, as are also bases of antennæ. Otherwise it agrees well with Giglio-Tos' description. The brownish spot at distal end of submarginal cell is subobsolete, and a similar cloud is apparent on last section of fourth vein at distal end of apical cell, and along last section of third vein. There are bristles on the edge of the scutellum, and the eyes are hairy, both of which characters are unmentioned by Giglio-Tos.

The specimen agrees well with the more important characters in Williston's description of *V. viridis*, from Chapada, Brazil, except that the ♀ front is not of equal width, but is very noticeably widened anteriorly. While the marginal cell is short petiolate, the legs are more luteous than in Giglio-Tos' specimen, yet their prevailing colour is black. In the colour of the scutellum it agrees better with *viridis*, and it possesses the ciliate-like pile of femora and tibiæ. These two species must be very closely allied.

48. *Eristalis tricolor* Jænn.

Tepic.—One ♀, Oct.

Length,  $9\frac{1}{2}$  mm. Has much more black on the abdomen than Lower California specimens. The black triangle of second segment expands on each side along posterior margin, widening at posterior corners of segment into a spot. Third segment is black, with a yellow spot on each side, which reaches anterior border only. Narrow hind margin of second to fourth segments light yellow. Tibiæ quite yellowish, even hind pair.

San José del Cabo. One ♀ and three ♂s, Sept. These have more yellow on the abdomen than the above specimen. The ♀ has even the fourth segment yellowish (brownish yellow), with black spot in middle. Second and third segments same. The three ♂s are the same, except that the fourth segment is wholly black in two, and with only the anterior lateral angles yellow in the other.

## TWO BEES NEW TO CANADA.

BY T. D. A. COCKERELL, BOULDER, COLORADO.

*Chelynia ricardonis*, n. sp. (? *rubi*, subsp.).

♀.—Length, 9 mm.; similar to *C. rubi* (Ckll.), but sides of head above, and sides and anterior part of mesothorax, with conspicuous white hair; tubercles densely fringed with dull white hair; abdominal markings bright lemon yellow (cream-coloured in *rubi*), the band on first segment broad and entirely curved at sides; that on second interrupted sublaterally, the lateral pieces of it pyriform; third segment with a rather short median stripe and small lateral spots; fourth with a median butterfly-shaped yellow mark; hind basitarsi long, subclavate, with reddish hair on inner side.

*Hab.*—Vernon, British Columbia, June 19, 1902 (Miss Ricardo). British Museum. This has the structure of *C. rubi* (*betheli* Ashm.), but differs in the colour of the markings and pubescence. It is probably a valid species, but it may prove to represent only a local race or subspecies of *C. rubi*. The latter occurs at Seattle and Olympia, in the State of Washington. Although the two species are not very far apart geographically, Vernon is an inland locality, with doubtless a very different fauna from that of the coast.

*Anthidium porterae* Ckll.

Calgary, one male (Miss Ricardo). British Museum. Also from Calgary, from some collector, is a male *A. tenuiflorae* Ckll., a form with the scape of the antennæ entirely black.